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REMARKS

Claims 1-12, 14-15, and 18-20 are currently pending in the present application. Claims 21-30 have previously been withdrawn. Claim 19 has been amended. Claims 13, 16, and 17 were previously canceled. Reconsideration of the application is respectfully requested in view of the following responsive remarks.

For the Examiner's convenience and reference, Applicants' remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the office action of February 15, 2008, the following actions were taken:

(1) Claim 19 were rejected under 35 U.S. C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention;

(2) Claims 1-4, 6-12, 14-15, 18, and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,120,588 (hereinafter "Jacobson") in view of U.S. Pat. No. 4,301,196 (hereinafter "McCormack");

(3) Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson in view of McCormack and further in view of JP 08-319575 (hereinafter "Takeda");

(4) Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson in view of McCormack and further in view of U.S. Pat. No. 3,918,927 (hereinafter "Wells");

(5) Claims 1-4, 6-12, 14-15, 18, and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson in view of McCormack and U.S. Pat. No. 5,403,649 (hereinafter "Morgan");

(6) Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson in view of McCormack and Morgan and further in view of Takeda; and

(7) Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson in view of McCormack and Morgan and further in view of Wells.

It is respectfully submitted that the presently pending claims be examined and allowed.

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Rejections Under 35 U.S.C. § 112

The Examiner has rejected claim 9 under 35 U.S. C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner questioned the amendment to claim 19 and alleged that it is unclear. The Applicant has amended claim 19 to remove any ambiguity. As such, claim 19 now recites that the ink-jetting step of the electroless initiator further includes a marring step.

As the Applicant has amended claim 19 to remove any ambiguity, the Applicant submits that the present claim set is in proper form and respectfully requests that the Examiner withdraw the present rejection.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected the claims 1-12, 14-15, and 18-20 under 35 U.S.C. 103(a) as being unpatentable over several references.

The Applicant does not deem it necessary to recite the entire case law standard required in order to establish a *prima facie* case of obviousness. However, the Applicant would like to briefly remind the Examiner of the required three criteria for a *prima facie* case of obviousness, namely 1) that the asserted references as modified or combined must teach or suggest each and every element of the claimed invention, 2) that the asserted references as modified or combined must provide a sufficient likelihood of successfully making the modification or combination, and 3) that the Examiner must identify a reason for the modification or combination asserted.

Specifically, the Examiner has rejected claims 1-12, 14-15, and 18-20 as being obvious in view various combinations of Jacobson, McCormack, Morgan, Wells, and Takeda. As such, a brief description of these references is believed to be in order.

Jacobson

Jacobson teaches electronically active inks for electroless plating. The inks may be applied by an ink jet system. However, as noted by the Examiner, Jacobson does not teach an electroless active layer.

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McCormack

McCormack teaches electroless copper deposition. The method includes the use of stannous chloride and palladium chloride.

Morgan

Morgan discloses methods of fabricating two-dimensional imaged metal articles on webs by electroless deposition of metal onto a catalytic pattern rotogravurely printed onto moving webs travelling at linear speeds of up to 500 meters/minute. See Abstract. Although Morgan mentions the use of catalytic inks by ink-jet or ink-mist, Morgan identifies ink-jetting as having "a major deficiency" referring to the slow speed of the ink-jet printing. See col. 2, lines 24-43; col. 2, lines 28-43.

Wells

Wells teaches a standard electroplating technique. The Examiner alleges that Wells discloses the use of an acidic palladium chloride solution to mar the surface of the substrate. However, Wells teaches that the acidic palladium chloride solution is used "to remove the tin salts." See col. 11, line 60. As such, Wells does not teach specific marring of the substrate.

Takeda

Takeda teaches the use of $\text{Pd}(\text{NH}_3)_4\text{Cl}_2$ as a palladium salt for electroless plating over carbon fine grains.

The Examiner has rejected the pending claim set over two sets of rejections. The first set uses Jacobson in combination with several references. The rejections include Jacobson as the primary reference in combination with McCormack as a secondary reference. The second set uses the same combinations as the first but also includes Morgan. As such, the Applicant wishes to address both sets of rejections.

Specifically, the Applicant contends that the first set of rejections does not disclose each and every element of the pending claims. Jacobson teaches an ink jet system for printing inks containing metal ions and a reducing agent. However, as noted by the Examiner, Jacobson does not teach an electroless active layer. It is also

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pointed out that Jacobson does not ink-jet its ink onto an electroless active layer, nor is the reducing agent contacted with the metal composition on the electroless active layer. The Examiner uses McCormack, which teaches the use of stannous chloride and palladium chloride as a sensitizing and seeding solution, to allegedly cure the at least three missing elements of Jacobson.

The Applicant has previously amended claim 1 to include that the electroless active layer is formed by ink-jetting an electroless initiator. As such, the presently amended claim set contains a fourth element missing from the present combination of references. Specifically, none of the cited references alone or in combination, i.e., Jacobson, McCormack, Wells, and Takeda, teach the step of forming an electroless active layer by ink-jetting an electroless initiator.

As the Examiner has noted, Jacobson does not teach an electroless active layer. Therefore, the Examiner has combined Jacobson with McCormack to cure the deficiency, as McCormack allegedly teaches an electroless active layer. However, there is absolutely no teaching in McCormack regarding ink-jetting. Therefore, McCormack alone or in combination with Jacobson does not teach the element of forming an electroless active layer by ink-jetting an electroless active initiator. Additionally, Wells contains no teaching of forming an electroless active layer by ink-jetting an electroless initiator, but appears to have been cited by the Examiner for the teaching of an electroless active layer by etching. Therefore, Wells does not cure the deficiency of Jacobson and McCormack. Furthermore, Takeda contains no teaching of forming an electroless active layer by ink-jetting an electroless initiator, and appears to have been cited by the Examiner for the teaching of $\text{Pd}(\text{NH}_3)_4\text{Cl}_2$ as the metal salt. Therefore, Takeda does not cure the deficiency of Jacobson and McCormack. As such, the Applicant submits that the present combination of references does not teach each and every element of amended claim 1.

The Examiner has previously responded to similar arguments by stating that since Jacobson teaches ink-jetting and McCormack teaches an electroless active layer, the combination provides the elements of the pending claim set. Such an argument infers that since an ink-jetting reference teaches ink-jetting, therefore, anything that is ink-jetted would be obvious. However, the Applicant submits that such conclusory arguments cannot serve as a *prima facie* case of obviousness since the Examiner must show that each and every element of the pending claim set is obvious in view of the

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cited art or the knowledge of one skilled in the art. Such a standard has not been met in the present case. Even if the present combination could lead one skilled in the art to ink-jet metal traces on a sensitized substrate (an element not found in either reference individually), this combination does not teach the step of ink-jetting an electroless active layer. The Applicant contends that the Examiner has used impermissible hindsight in an attempt to reconstruct the present invention. The court has stated that the Applicant's specification cannot be the basis for motivation, i.e., no hindsight reconstruction. Yamomouchi Pharmaceutical Co., Ltd. v. Danbury Pharmacal, Inc., 231 F.3d 1339, 56 U.S.P.Q.2d 1641 (Fed. Cir.), reh'g denied, 2000 U.S. App. LEXIS 34047 (2000). Accordingly, if a prior art reference is sought to provide a specific element of a claim with the use of hindsight, any rejection based thereon is improper and should be withdrawn.

In response to the above arguments, the Examiner has issued a second set of rejections using all of the references cited in the previous office action but adding another secondary reference that the Examiner alleges "further demonstrat[es] the known use of ink-jetting to provide patterned application of catalyst activating material in the form of metal salts prior to electroless plating." See Office Action, page 17. The Applicant notes that the issuance of the second set of rejections provides further evidence that the first set of rejections is incomplete and does not teach each and every element of the present claims. In light of the arguments above and the issuance of the second set of rejections that contains an additional reference to allegedly teach the element of ink-jetting the electroless initiator, the Applicant submits that the first set of rejections, i.e., Jacobson, McCormack, Wells, and Takeda, does not teach each and every element and respectfully request that the Examiner withdraw the rejections.

With regard to the second set of rejections, i.e., Jacobson, McCormack, Morgan, Wells, and Takeda, the Applicant renews the above arguments and submits that Morgan does not teach ink-jetting an electroless initiator as presently claimed. Specifically, Morgan recites that the ink-jet ink have low viscosity and "consist[s] essentially of palladium salt in an organic solvent." See col. 1, lines 32-34. As such, the Applicant contends that Morgan is referring to the step of "ink-jetting a metal composition on the pattern, said metal composition including a metal salt" of claim 1

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rather than the step of ink-jetting an electroless initiator. Regardless, Morgan does not teach these two separate ink-jetting steps as required by claim 1.

Furthermore, and perhaps more importantly, Morgan teaches away from the present ink-jetting method. As briefly discussed above, Morgan identifies ink-jetting in the "Background of the Invention" section as having a major deficiency; i.e., speed. Additionally, Morgan states that these problems (including ink-jetting) can be overcome by using its improved methods, which are directed at gravure printing. See col. 2, lines 28-68; col. 3, lines 20-34. As such, Morgan actually teaches away from the use of ink-jet printing of catalytic inks.

As the Applicant has raised the issue of teaching away, the Applicant would like to review the current case law regarding teaching away for the Examiner's convenience. The Court of Appeals for the Federal Circuit has clearly stated that "an applicant may rebut a prima facie case of obviousness by showing that the prior art teaches away from the claimed invention in any material respect." In re Petersen, 315 F.3d 1325, 1331 (Fed. Cir. 2003). The Court has also stated that "[w]e have noted elsewhere, as a 'useful general rule,' that references that teach away cannot serve to create a prima facie case of obviousness." (emphasis added) McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 1354 (Fed. Cir. 2001). In identifying the appropriate standard for teaching away, the Court has further stated:

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be **discouraged from following the path set out in the reference**, or would be led in a direction divergent from the path that was taken by the applicant. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the **line of development** flowing from the reference's disclosure is **unlikely to be productive** of the result sought by the applicant." (emphasis added) In re Gurley, 27 F.3d 551, 553 (Fed. Cir. 1994).

Clearly in the present case, a person of ordinary skill in the art would be led in a direction divergent from the path that is taken by the Applicant, since Morgan teaches that ink-jet printing contains major deficiencies (i.e., speed) and further directs one skilled in the art to gravure printing of catalytic inks. As Morgan teaches away from the present invention, Morgan cannot be properly used in a 103 rejection.

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In view of the foregoing, Applicants believe that claims 1-12, 14-15, and 18-20 present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone the undersigned attorney at (801) 566-6633 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 12th day of May, 2008.

Respectfully submitted,



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